

striped by two dark chestnut bands, one above and the other below the periphery; suture well impressed; aperture oblique; lip simple, thickened, umbilicus moderate, deep, partially covered by the reflected lip at the columella.

Height of the largest specimen  $\frac{9}{16}$  inch, greatest diam.  $\frac{7}{8}$  inch, lesser  $\frac{3}{4}$  inch.

Habitat near Franklin, Idaho, among Red Sandstone.

A very thin and almost transparent variety of the very variable *strigosa*. By its peculiar shade, it is very evident that the animal has drawn largely from the red sandstone for the material to build its shell.

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#### NEW FORMS OF AMERICAN PUPIDÆ.

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BY DR. V. STERKI.

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*Pupa Californica*, varieties, continued.

4. *From Monterey, Cal.* In size not much different from the type, yet a little smaller, and more generally obovate; the striæ are less coarse; the peristome is slightly but distinctly expanded. There is no superior palatal lamella, and the three present ones are small, the columellar even a trace or wanting entirely. The form may be named: *var. trinotata*.

5. *From San Diego, Cal.* The diminution of the lamellæ is going on; none but the apertural is left in this variety—*diegoensis*—and that even is quite small or a mere trace. In size and shape, the examples are not much different from the Monterey form, which is an intermediate one. In the relation of *var. diegoensis* and the very distinct *var. catalinaria*, and also *elongata* on the neighboring islands, there is a zoogeographical enigma, which may be solved in connection with other facts.

6. *From Rocklin, Cal.* (Placer Co. 25 Ms. N. E. of Sacramento.) Large, conic or ovate conic, or turriculate, umbilicated, rib-like striæ rather strong; whorls 5, well rounded, with deep suture, the last occupying more than  $\frac{1}{2}$  altit.; aperture subovate or nearly circular, margins much approximate and the ends protracted, peristome shortly but decidedly expanded; lamella one, apertural, small. Alt. 2, 5; diam. 1, 5 mill. For its size, rounded aperture and single lamella I would name this form *var. cyclops*. It is with some doubt

that I refer this form to *P. californica*: it might just as well be regarded as a distinct species. But for that there will be time if no intermediate and connecting forms be found.

It will be of special interest to examine and compare the soft parts of all these varieties or forms, anatomically as well as to the mode of life.

Some conchologists may consider it to be useless or even worse to apply varietal names to the forms described above; but we must try to arrange them systematically as naturally as possible, according to their relations among themselves and with kindred species; and for that purpose we must name them. And it is also for convenience; is it easier to say, in citing: "*that variety of P. californica inhabiting Santa Catalina and San Clemente Islands, much smaller than the type, with lower whorls, lighter coloration, relatively coarser striation, and well formed lamellæ,*" than simply designating it by a name?

**Pupa Dalliana** sp. nov.

Shell conic or ovate-conic, of greenish-horn color, transparent, finely irregularly striate in the lines of growth, polished; whorls  $4\frac{1}{2}$ , well rounded, with deep suture, rather rapidly increasing, the last occupying about  $\frac{3}{8}$  of altit., towards the aperture somewhat ascending on the penultimate. Aperture lateral, somewhat oblique, subovate with just perceptibly flattened palatal margin; margins approximate, the ends protracted; peristome shortly but decidedly expanded, with a very fine thread-like lip near the margin, the same continuing as a very fine callus on the apertural wall inside of the line connecting the ends of the margins; palatal wall quite simple; no lamellæ.

Alt. 1. 2; diam. 1. 3 mill.

This form has been collected by Mr. Hemphill near Clear Lake, Lake Co., Cal., and I propose to name it in honor of Mr. Wm. H. Dall. The specimens before me were fifteen, fresh, remarkably uniform in their whole appearance; all were more or less covered with a dark brown, hard crust of slime and dirt, generally thickest around the aperture. Doubtless this coating is done "purposely" by the animals, as in many other species also. When cleaned, it shows about the size and shape of a well-grown *Vertigo ovata*, Say, but by a good eye or under a glass is at once recognized as something else, by the rounded aperture and the absence of lamellæ.